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15. Joel Washington Smith

XV.

Epidemic Cholera.

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Epidemic Cholera.

No disease of modern times to which the human family is subject has been investigated with greater zeal and assiduity by the medical profession, than Epidemic Cholera. From its extensive diffusion and rapidly devastating effects, every circumstance calculated to throw light upon the subject becomes invested with great interest and importance, and especially so to the professed guardians of the public health. It is not my object in the present essay to discuss the merits of, or the objections to the many and conflicting hypotheses which have been advanced in regard to this disease, nor to attempt an explanation of the different phenomena which have been observed in its

progress, but briefly to consider
the History, Symptoms, Causes &
Treatment of epidemic Cholera.

History - In regard to its history there
is a diversity of opinion, some
maintaining that it is only a malignant
form of common cholera, but the
preponderance of evidence is in
favor of its being an entirely dif-
ferent disease. Those who admit
this, however, are still divided, as
to whether the disease is a new one,
or has existed from an indefinite period.
Notice of this, or of a very similar
disease is found in the writings of
Hippocrates, Aretaeus, Celsus & Galen;
while the more modern writings of
Willis, Sydenham, Bontius, Meunro and
others, furnish very accurate descriptions
of epidemic cholera. The evidence
thus afforded, though perhaps not
conclusive, is at least strongly presu-
-mptive that the epidemics of those

writers were identical with the present disease. In India, it is believed to have prevailed at different periods, but it was not until within a third of a century that it extended itself from one country to another, so that at present nearly all portions of the globe have been scourged by it to a greater or less extent.

Form of attack. There are several distinct forms in which the disease makes its attack. In some cases it is sudden and without any premonitory symptoms, but this form is comparatively rare.

Commonly the specific symptoms are preceded for a time, frequently days, by certain premonitory symptoms. At times the different symptoms appear to run almost imperceptibly into each other, but for the sake of greater perspicuity I shall divide them into three stages; and this often appears to be a natural division.

I. The Incipient or Premonitory Stage - Diarrhoea

is almost always present as one of the earliest symptoms, the discharges at first, foecal and bilious, gradually becoming of a serous character, like those after the cold stage is completely formed.

The diarrhoea is often ^{supplanted} accompanied by a sense of languor, lassitude, indescribable suffering, deep colicky pains, rapid prostration, anorexia, at times by profuse sweats, nausea and vomiting, disturbance of the senses and occasionally, by great mental depression for a longer or shorter time, or until the stage of collapse. In some cases the feeling of debility and prostration is so severe that a considerable degree of collapse will have ensued before the occurrence of vomiting and cramps.

Purging usually precedes the second stage for several days, at other times only for a few hours, but from 24 to 48 hours may be considered as the mean duration of the incipient stage.

The tendency of this purging is to pass into the subsequent ~~stage~~^{stage} of collapse and the transition is often hastened by some dietetic error, excess or exposure,

Occasional cases have occurred in this but according to accounts more frequently in India, in which there have been no premonitory symptoms, before the stage of collapse, and still more rarely of those in which there is no discharge from the stomach and bowels, and no reaction but almost immediate death. This form has been termed "Cholera sicca," and when occurring is a most hopeless and fatal variety.

II. Symptoms of the cold stage. This has usually been denominated the cold, collapsed or asphyxiated period. The precursory symptoms increase in severity, the vomiting and purging becomes more severe and constant, the stools at first fecal and perhaps slightly bilious, now become more liquid and whitish, resembling

a decoction of rice or unclarified whey, of a peculiar insipid, spermatic odor, and the same kind of fluid is also discharged from the stomach.

These discharges may or may not continue during this stage, or throughout the disease, but are very rarely absent.

There is deep pain and sense of oppression in the epigastrium, with distressing hicough and the patient is harrassed with constant thirst.

Cramps, or spasmodic contractions soon come on, affecting not only of the calves of the legs and abdomen, but all the muscles of the body, and often comprise one of the most distressing symptoms of the disease.

These are rarely absent ~~and in some cases~~ and in some few cases have been the only symptoms of an attack.

The pulse is frequent, feeble and small, gradually and at times speedily becoming imperceptible in the extremities,

the coldness of surface increases rapidly, the countenance becomes anxious and hyppocratic, the skin becomes corrugated as from long exposure in water, the size of the body diminishes perceptibly, the nails livid and the genital organs retracted.

The eye is sunken and often surrounded by a bluish circle, the cornea dull and dry, the conjunctiva pale and at times injected and at times injected in its lower portion, the respiration frequent or slow and irregular, as is thought from spasm of the muscles, the breath cold, the quantity of carbonic acid diminished, the tongue cold and moist, the secretions arrested, the voice becomes husky and feeble, or is reduced to a whisper, the face and extremities moistened by a cold clammy sweat, and in some cases the surface is covered with livid blotches.

During almost the entire stage of

collapse, the intellect remains unimpaired, but there is a remarkable apathy and unconcern as to his own condition as well as indifference to all surrounding objects. There is little suffering or complaint except of a sense of oppression over the praecordia, and the stomach becomes insensible to the most powerful stimulants. Very few recover from this condition of extreme collapse, but in many cases from the disease being of a milder type, or from the remedies employed such a degree of collapse did not take place.

When death occurred during this stage as it did in the great majority of the fatal cases, it was often within two or three and seldom delayed beyond ten or fifteen hours, from the commencement of this stage.

III. Symptoms of the stage of Reaction - At the close of the former stage, if death does not take place one of two things will

occur, either the health will be restored without the intervention of any new untoward symptoms, or the symptoms of collapse will be succeeded by those of the stage of reaction. In this stage the symptoms vary greatly according to the degree of reaction. Commonly after a variable length of time, and often before this stage, there is a cessation of the vomiting ~~and~~ purging and cramps, the coldness ceases to increase, warmth of the surface gradually returns, the pulse, if absent again becomes perceptible, soft, fuller and stronger and febrile in character, the patient becomes more sensible, the color of the face returns, the countenance becomes expressive and natural. If the termination is to be favorable the vomiting ceases, and though the diarrhoea may continue, the discharges become foecal and billious, the secretions are reestab-

-lished, the pain, nausea thirst &c.
pass off, the circulation becomes
regular and convalescence is established.

At times reaction is more slow and
the patient remains for an uncertain
period in a most critical and dangerous
condition which may terminate in death
or recovery. If reaction is very energetic
a new order of symptoms may arise
equally dangerous to the patient as
they give rise to spasms, convulsions,
congestions and inflammations both of
a local and general character.

There is frequently great sensibility to
light with giddiness and severe pain
in the head, the tongue at first clean
and moist, becomes dark, sordes accu-
-mulate, the eyes become more injected
and turned back, the intellect grows
more ~~turpid~~ ^{stupid}, presenting at this stage
many of the symptoms of the last
stage of Typhus fever. The duration of
this stage is usually from five to ten

days and in the extreme cases, is almost uniformly fatal. There is always great tendency to local congestions and unequal distributions of the circulating fluids. During convalescence inflammatory affections of the gastro-intestinal canal and of the respiratory organs often make their appearance. In other cases instead of convalescence there is often a development of fever of an intermittent, bilious or typhoid type, but in this country by far the most characteristic and formidable secondary affections are those of the brain or nervous system.

Predisposing & Exciting Causes - There are numerous and often act interchangeably, that is, those which are predisposing in one case may prove exciting in another and vice versa. Among the former appear to be a high degree of temperature united with moisture, as in low damp situations, crowded ill ventilated dwellings, want of clean-

liness, insufficient clothing, imperfect nutrition from a scanty or improper supply of food, irritable bowels, or any other circumstances which tend to lower the vital powers below the standard of healthy action. Among these causes I would mention the system of extreme dieting, not to say starvation which has been so rigidly persevered in by many during the prevalence of cholera. By depriving themselves of their usual quantity and variety of nutriment they rob the system of a portion of its healthy nutrition, and by proclaiming this exclusive diet, fear is created and seizes upon many who feeling at a loss as to what they can safely eat, finally conclude that to be upon the safe side, as they regard it, will restrict themselves to a scanty supply of only a few articles; forgetting that abstinence may be and often is as bad as excess in causing debility.

The result has been such as was to be expected; The general health gives way, the powers of the system are weakened and thus is induced a strong predisposition, or a standing invitation to an attack of the disease. Among the direct or exciting causes are excessive fatigue, intemperance, exposure to cold, or sudden changes of temperature, as night air, the depressing passions, improper food or drink, profuse evacuations from any cause, venereal excesses, long watching, attendance upon the sick, or exposure among those suffering under the disease, and many other circumstances too numerous to mention. In addition to the above mentioned causes, there are occasional cases for which we are unable to discover any assignable cause.

Diagnosis. - In the early stage it may be confounded with cases of poisoning,

common cholera, indigestion, gastro-enteritis, asphyxia, the plague and some other affections, but after the period of collapse, it was seldom be difficult, especially if occurring during the prevalence of the disease.

Prognosis. If properly treated during the first stage it could almost invariably be arrested. When the disease was fully formed, but had not yet proceeded to complete collapse, the termination was favorable in a great majority of cases, under appropriate treatment. But it will always be favorable directly in proportion to the degree of collapse.

It is not always when the purging, vomiting and cramps are most violent that there is the greatest danger, for in some cases where those symptoms ceased, such apparently favorable change was owing only to the natural progress of a bad condition.

into one more hopeless. The fatality varies considerably in different localities and has usually been much greater at the commencement and gradually diminished with the continuance of the disease. It will be more favorable in a young, or middle aged and previously healthy subject, and towards decline of the epidemic, than when occurring in the aged, or those previously debilitated from any cause, and at the commencement of the attack. Very few recover from the condition of extreme collapse, but if symptoms begin to appear, there is ground for hope, though there will be great danger from the subsequent stage of reaction. The cold stage may terminate fatally in consequence of the discharges from the stomach and bowels before cyanosis and cramps come on, and if the prostration

is rapid and the degree of collapse extreme, we may usually anticipate a serious or fatal termination without passing into the third stage, but if the patient survives and passes into it, the disease will be malignant and dangerous in proportion to the intensity of the degree of collapse.

Treatment—Much may be done by early treatment to prevent an attack, and prophylactic measures involve considerations of the highest importance in regard to public and private hygiene. Free ventilation of dwellings and strict cleanliness are important.

The diet should be such as will preserve the digestive organs and general system in the soundest health. The food should consist of a mixture of animal and vegetable food, of sufficient quantity, of good quality and well cooked.

Regularity in eating and drinking, of exercise and rest are essential. Excessive exercise of body or mind and all sudden changes of temperature, or of the habits (unless bad) should be carefully avoided. Costiveness should be guarded against, and the necessity for cathartic medicines, thus be avoided.

The rich should be cautioned against excessive indulgence and the poor should be liberally supplied with wholesome food and warm clothing, and the fears of all should be quieted as much as possible.

In the treatment of the disease when fully formed I do not propose to lay down any very definite rules, for I know of none; and it is only by adapting our remedies to the ever varying circumstances of individual cases and different stages of the same case, rather than from a search after, and trial of specifics for one symp-

-turns or portion only of an extensive series of changes, that we can expect to be successful.

1st Stage- During the continuance of the incipient stage, if there is manifest derangement of the stomach & bowels, the use of ^{emetics} laxatives, and the milder cathartics, ^{particularly calomel,} will often be indicated.

The various preparations of opium alone or in combination with calomel will be found useful. Sinapisms to the stomach and extremities,

cataplasms over the abdomen, and the use of the various astringents as tannin and the acetate of lead, alone or combined with opium and other remedies are often valuable adjuvants, but large doses of opium are objectionable.

If there is great depression and muscular weakness the patient should abandon all occupation, and if robust and there is plethora, bleeding will be proper and may be repeated with benefit.

If there is an opposite condition the tepid bath, or affusions of warm water will be proper, followed by frictions with warm flannel, repose and the use of diaphoretic drinks and other means for promoting perspiration. Afterwards tonics and Stimulants may be indicated.

2^d Stage- In this stage the same indications are presented as in the preceding, with the additional ones of checking the excessive sweats and of restoring the loss of the watery fluid and salts sustained by the blood. Diluent food and drinks will accomplish those ends during the early stage, as fully as any other means. In no case should bloodletting be resorted to after the stage of collapse is fully formed, though in many cases even after there is a partial degree of collapse it will prove a most valuable remedy. Calomel alone or combined with opium and astringents exerts a most powerfully

beneficial influence by its sedative effect in tranquilizing the system, allaying gastric and intestinal irritation and in restoring the secretions to their healthy condition. Whenever the stomach can be brought under its influence there is usually a return of the suspended secretions, with a fair prospect of recovery, or of rendering the symptoms of the stage of reaction of a milder type. Strong mercurial ointment mixed with camphor and capsicum has at times been rubbed over the whole body and with very gratifying results when the speedy action of mercury was desired.

Camphor is a valuable remedial agent from its known power of checking diarrhoea, allaying irritation and promoting perspiration. Cups, leeches and sinapisms, with fomentations, over the abdomen or along the spine are beneficial in cases accompanied

by much pain and obstinate cramps.

Cold water or small pieces of ice is very grateful in allaying the intense thirst. Powerful irritants are not generally serviceable either externally or internally. To allay the cramps and restore the ^{healthy} action of the skin frictions and baths, at times of a stimulating nature, and ranging from near the freezing point to that of blood heat, so as to suit the habits, constitution and excitement of the patient, will be found serviceable.

Dry heat applied in various ways, has seemed in some cases to produce more favourable effects, but there are cases where heat applied in any form appears to aggravate by increasing the already excessive exhalation of the cutaneous surface and by the disagreeable sense of heat which it has upon the patient.

In the use of stimulants, some of the milder ones as carbonate of ammonia, oil of turpentine and capsicum are

to be preferred. In some cases after the causes of the disease have ceased to operate and only the effects remain, tonics as the sulphate of quina may be advantageously employed. From this stage, when extreme, there is but little prospect of recovery, and the functions of organic life are so nearly suspended, or destroyed that medicines if poured in cannot be absorbed and thus can have no beneficial influence upon the system. In this condition diversified and powerful means have been resorted, but the patients have generally sunk in spite of every thing. Cases have occurred where all artificial means have failed to produce reaction but in which the patient has appeared to emerge from the cold stage, solely by the unaided powers of the constitution, with a faint chance of life in the very bad form of reaction which is sure to follow. In some of the desperate cases we may with propriety successively try all of the means menti-

-med, or any others that are likely to afford relief. Naphtha has been used with advantage to check diarrhoea and allay irritation. Chloroform has also contributed much towards the temporary relief of the patient by relieving the painful cramps. Carbonate of soda has been freely used and with much asserted benefit. Warm enemata of water and various salts and substances have been tried with variable success. The injection of warm and saline fluids into the veins has been resorted to, and with temporary benefit, but in nearly all the patients have soon relapsed into their former condition. It is not impossible however, that if more attention had been paid to the nature, quantity ^{of the fluid} and ^{the} manner of performing the operation, that more decided and permanent advantage would have resulted.

3^d Stage - In this stage the treatment will need to be adapted to the variable, morbid conditions and guided by such general principles as are applicable to all other

affections. There is usually a great tendency to local congestions and inflammatory affections, and when occurring they must be treated by sedatives, antiphlogistics and the usual means with an energy just proportionate to the degree of reaction, except that local depletion is preferable to general bleeding. The chief reliance is to be placed on fomentations, rubefacients, blisters, mercurial and proper attention to regimen. If typhoid symptoms make their appearance, the case may require stimulants and tonics, as carbonate of ammonia, wine whey, oil turpentine, quina &c as in ordinary typhus. Attention to diet or regimen is important in the treatment of every stage, but particularly, during the stage of reaction. Convalescence is at times rapid, but oftener very slow, and the constitution at times appears to undergo an entire change.

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